

CLAIMS

For the convenience of the Examiner, all claims have been presented whether or not an amendment has been made. The claims have been amended as follows:

1. **(Currently Amended)** A method of processing a database service query, comprising:
 - receiving a service query,
 - obtaining a sum of terms associated with the service query by expanding at least one nested term into one or more un-nested terms,
 - ~~evaluating each term as a separate~~ the sum of terms as a plurality of SQL instruction instructions, and
 - ~~executing each separate SQL instruction.~~ determining a plurality of results associated with the sum of terms, and
 - deleting or disregarding at least one duplicate result associated with the sum of terms.
2. **(Original)** The method as claimed in claim 1, further comprising expanding each term to remove NOT operators.
3. **(Original)** The method as claimed in claim 2, wherein the sum of terms are expanded using Boolean logic.
4. **(Original)** The method as claimed in claim 1, in which the service query is an X.500 or LDAP service query.
5. **(Original)** The method as claimed in claim 1, in which the service query is a search service query.

6. **(Withdrawn)** A method of processing a database service query, comprising:
determining a SQL instruction representative of a function;
listing the results of a subtracted SQL instruction in a first list, listing the results of a non-subtracted SQL instruction in a second list; and
not listing results which are duplicates of previously listed subtracted or non-subtracted results.

7. **(Withdrawn)** The method as claimed in claim 6, in which the service query is an X.500 or LDAP query.

8. **(Withdrawn)** The method as claimed in claim 6, in which the service query is a search service query.

9. **(Currently Amended)** A system for processing a directory service query, comprising:

a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data; and

means for processing a service query by:

obtaining a sum of terms by expanding at least one nested term into one or more un-nested terms,

evaluating ~~each term as a separate~~ the sum of terms as a plurality of SQL instruction instructions, and

~~executing each separate SQL instruction.~~ determining a plurality of results associated with the sum of terms, and

deleting or disregarding at least one duplicate result associated with the sum of terms.

10. **(Previously Presented)** The directory service arrangement as claimed in claim 9, further comprising means to perform X.500 or LDAP services.

11. **(Withdrawn)** A directory service arrangement comprising:
a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data, and

means for processing a service query by determining a SQL instruction representative of a function, listing the results of a subtracted SQL instruction in a first list, listing the results of a non-subtracted SQL instruction in a second list, and not listing results which are duplicates of previously listed subtracted or non-subtracted results.

12. **(Withdrawn)** The directory service arrangement as claimed in claim 11, further comprising means to perform X.500 or LDAP services.

13. **(Withdrawn)** A method for processing a database service query, comprising:
translating a service query to an expression;
simplifying the expression to a number of smaller expressions, each smaller expression being capable of being flattened;

flattening each smaller expression; and
executing each flattened expression.

14. **(Currently Amended)** A method of processing a directory service query, comprising:

receiving a directory service query,
obtaining a sum of terms by expanding at least one nested term into one or more un-nested terms,

mapping the sum of terms to a plurality of SQL instructions,
~~evaluating each mapped term as a separate SQL instruction, and~~
~~executing each separate SQL instruction.~~ determining a plurality of results associated with the sum of terms, and

deleting or disregarding at least one duplicate result associated with the sum of terms.

15. **(Previously Presented)** The method as claimed in claim 14, further comprising expanding each term to remove NOT operators.

16. **(Original)** The method as claimed in claim 15, wherein the sum of terms are expanded using Boolean logic.

17. **(Previously Presented)** The method as claimed in claim 14, in which the service query is an X.500 or LDAP service query.

18. **(Previously Presented)** The method as claimed in claim 14, in which the service query is a search service query.

19. **(Withdrawn)** A method of processing a directory service query, comprising:
determining a SQL instruction representative of the directory service query;
listing the results of a subtracted SQL instruction in a first list, listing the results of a non-subtracted SQL instruction in a second list; and
not listing results which are duplicates of previously listed subtracted or non-subtracted results.

20. **(Withdrawn)** The method as claimed in claim 19, in which the service query is an X.500 or LDAP query.

21. **(Withdrawn)** The method as claimed in claim 19, in which the service query is a search service query.

22. **(Currently Amended)** A system for processing a directory service query, comprising:

a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data; and

means for processing a directory service query by:

obtaining a sum of terms by expanding at least one nested term into one or more un-nested terms,

mapping the sum of terms to a plurality of SQL instructions,

~~evaluating each mapped term as a separate SQL instruction, and~~

~~executing each separate SQL instruction.~~ determining a plurality of results

associated with the sum of terms, and

deleting or disregarding at least one duplicate result associated with the sum of terms.

23. **(Previously Presented)** The directory service arrangement as claimed in claim 22, further comprising means to perform X.500 or LDAP services.

24. **(Withdrawn)** A directory service arrangement comprising:

a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data, and

means for processing a directory service query by determining a SQL instruction representative of the directory service query, listing the results of a subtracted SQL instruction in a first list, listing the results of a non-subtracted SQL instruction in a second list, and not listing results which are duplicates of previously listed subtracted or non-subtracted results.

25. **(Withdrawn)** The directory service arrangement as claimed in claim 24, further comprising means to perform X.500 or LDAP services.

26. **(Withdrawn)** A method for processing a directory service query, comprising:
translating a directory service query to an expression;
simplifying the expression to a number of smaller expressions, each smaller expression being capable of being flattened;
flattening each smaller expression; and
executing each flattened expression.

27. **(Currently Amended)** The method of claim 1 wherein:
evaluating the sum of terms comprises converting the sum of terms to a plurality of SQL instructions comprising at least one negative term;
and further comprising:
subtracting at least one result associated with the at least one negative term.
~~obtaining a plurality of results wherein each separate SQL instruction is associated with one or more results; and~~
~~combining the one or more results associated with each separate SQL instruction.~~

28. **(Currently Amended)** The method of claim 27 1, wherein obtaining a sum of terms comprises:
~~evaluating each term as a separate SQL instruction comprises:~~
identifying at least one term associated with at least one NOT operator; and
expanding the at least one term associated with the at least one NOT operator into at least one negative term;
~~obtaining a plurality of results comprises obtaining one or more negative results associated with the at least one negative term; and~~
~~combining the one or more results comprises subtracting the one or more negative results associated with the at least one negative term.~~

29. (Currently Amended) The method of claim 1, wherein: ~~27, further comprising, subsequent to obtaining a plurality of results:~~

if the service query comprises a term having at least two NOT operators, deleting or disregarding a third-order term corresponding to the term having at least two NOT operators.

~~identifying one or more duplicate results; and~~

~~deleting or ignoring the one or more duplicate results.~~

30. (Currently Amended) The method of claim 1, wherein obtaining a sum of terms comprises:

~~evaluating each term as a separate SQL instruction comprises:~~

identifying at least one term associated with at least one NOT operator; and

expanding the at least one term associated with at least one NOT operator into at least one negative term and at least one positive term.

31. (Previously Presented) The method of claim 30, further comprising:
obtaining a plurality of results wherein each term is associated with one or more results;

generating a first list comprising one or more results associated with the at least one negative term;

generating a second list comprising one or more results associated with the at least one positive term; and

removing or omitting from the second list one or more results associated with the at least one negative term.